***NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 1.6: Graphing Compound Inequalities***

**What is a compound inequality?**

**Examples:**

**-2 ≤ x < 1 x < -1 or x ≥ 2**

**These can be read as:**

All real numbers that are greater than or equal to All real numbers that are less than -1 ***or***  greater than or

-2 ***and*** less than 1. equal to 2.

Try these:

1. Example: 3 ≤ m < 7
2. Example: x ≤ -3 or x >0
3. Example: x < 4 or x > 6
4. Example: -5 < t ≤ -1

***1.6: Solving Compound Linear Inequalities***

**Example:** -2 ≤ 3t – 8 ≤ 10 **Example:** 6 < -3x + 12 ≤ 21

GRAPH: GRAPH:

**Example 3:** 2x + 3 < 5 ***or*** 4x – 7 > 9 GRAPH:

|  |  |
| --- | --- |
| ***Solve and graph the solution on a number line*** | |
| 1) -4 ≤ -5 – 2x ≤ 3 | 2) -3t – 5 < 8 **OR** -4t + 3 > 7 |
| 3) -18 < -2x + 10 < 6 |  |
| 5) -3 ≤ 2(y-2) < 6 | 6) 3a + 1 < -2 **OR** 3a + 1 > 7 |
| 7) -25 < -8(1 + 2v) – 1 ≤ -9 | 8) 6 < -(2 + 2m) – 2 **OR** -p + 6p ≤ 4 + 6p |
| 9) -9 < 5x – 7(x + 1) < -3 | 10) r – 7 > 9 – r **OR** 38 + 5x > 4(6 + 8x) |